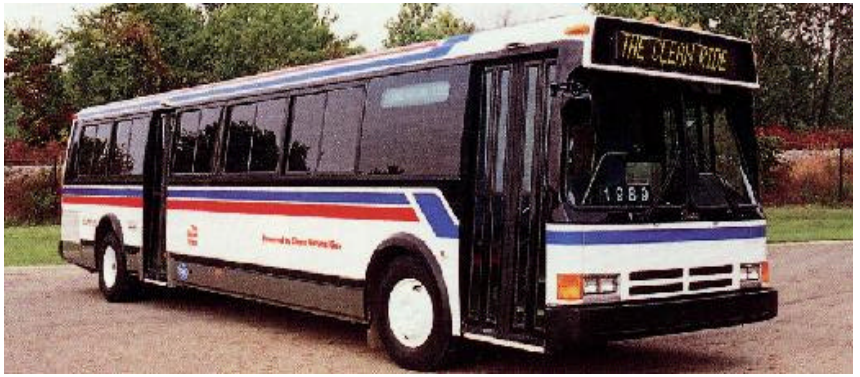
NASA
Glenn
Success
Stories

Hybrid Turbine-Electric Transit Bus

NASA Glenn, State of Ohio, Cleveland Regional Transit Authority, Lincoln Electric, Teledyne Ryan Aeronautical, Bowling Green State University, and Howard University

TECHNOLOGY

Develop a vehicle which uses a natural gas fueled turbine to produce electricity that will power a variable speed electric drive train.



Hybrid Electric Bus

COMMERCIAL APPLICATION

- **Transportation Industry**
  - Automobiles
  - Delivery vehicles
  - Municipal waste trucks
  - School buses
  - Shuttle buses

SOCIAL / ECONOMIC BENEFIT

- Very low emissions
- Reduced vehicle maintenance
- Multiple fuel capability
- Smooth and quiet operation
- Recovery of energy during braking
- Positive impact on the small aircraft industry

NASA APPLICATIONS

- Vehicles power system is a natural gas fueled turbine developed from an aircraft jet engine
- System analysis of ground based electric vehicle propulsion including the possible use on space planetary rovers
- Mass production of smaller turbine engines for buses, which are not yet available, will impact the small aircraft industry

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